UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,802	04/04/2002	Toru Kawase	OGOH:110	3089

27890 7590 07/07/2006

STEPTOE & JOHNSON LLP
1330 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

EXAMINER	
NGUYEN, KEVIN M	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/089,802	KAWASE ET AL.	
	Examiner	Art Unit	
	Kevin M. Nguyen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Response to applicant's amendment and argument filed on 04/14/2006. The rejection under 35 U.S.C. § 112, second paragraphs is withdrawn. The rejection with respect to unamended claims 3, 7, 20 and 53 in view of cited prior arts is maintained. Applicant amended claims 1, 5, 34, 36, 38 and 40 necessitated new ground of rejection in view of newly cited prior art.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 3, 7, 8, 17, 18, 20, 21 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Wagner (US 5,933,130).

4. As to claims 3, 7 and 20, Wagner teaches a method of driving a display panel [this invention may be used with many types of displays, see col. 7, lines 7-8], comprising:

setting a pixel luminance value to a target luminance setting value at least two times [a general level of brightness of the display is set a desired level, a range in which the brightness will vary is then set—the range is preferably relative to the general level

of brightness of the display, a time that the brightness varies within the selected range is also set, and the pattern for adjusting the brightness within the specific time and range is set, see col. 7, lines 35-42. The system continues to adjust the brightness according to the selected general level of brightness, range, period and pattern until the user resets one or more of the factors or the user stops the system, see col. 10, lines 59-64. Thus, setting brightness more of the factors corresponding to setting luminance value at least two times as claimed] at predetermined time intervals [As shown in Fig. 9, the period 64 is also selected. The period may be a fixed time interval which is preset or set by the user, i.e., a fixed period of about five minutes is selected, see col. 10, lines 19-22];

carrying out luminance value setting operations such that a luminance setting values is set to a different luminance setting value each time a luminance value setting operation is preformed, so that the luminance setting value is changed with the elapse of driving time [A default interval of five minutes is preferably selected. It will be appreciated that the brightness of the display may be adjusted at intervals of less than five minutes such that the eyes of the viewer must more frequently adjust to the brightness of the display. The brightness of the display may also be adjusted at intervals of every second or even less such that the brightness is rapidly or almost constantly changing. Alternatively, the period may be randomly chosen using signals from a random number generator in a manner similar to that described above, see col. 10, lines 23-33. In each of the embodiments of FIGS. 4, 5, and 6, the wave will be applied

at the appropriate starting point for each cycle to cause the appropriate change in brightness, see col. 10, lines 48-50].

5. As to claim 8, Wagner teaches wherein until the difference between the measured luminance information and the luminance setting value reaches a fixed value or less, correction operations are repeated continuously [see col. 10, lines 59-64 for details of the explanation].

6. As to claim 17, Wagner teaches wherein the captured luminance information is driving current [see fig. 11, col. 12, lines 42-49, col. 14, lines 4-15 for details of the explanation].

7. As to claim 18, Wagner teaches wherein the captured luminance information is that of the starting point of the illumination of pixels [see col. 10, lines 33-36 for details of the explanation].

8. As to claim 21, Wagner teaches wherein input luminance signals are corrected in accordance with the correction values stored in the correction memory [see col. 6, lines 30-33 for details of the explanation].

9. As to claim 53, Wagner teaches the luminance correction device of a display panel, comprising:

luminance target means for setting pixel luminance to a target luminance setting value at least two time at predetermined intervals [a general level of brightness of the display is set a desired level, a range in which the brightness will vary is then set—the range is preferably relative to the general level of brightness of the display, a time that the brightness varies within the selected range is also set, and the pattern for adjusting

the brightness within the specific time and range is set, see col. 7, lines 35-42. The system continues to adjust the brightness according to the selected general level of brightness, range, period and pattern until the user resets one or more of the factors or the user stops the system, see col. 10, lines 59-64. Thus, setting brightness more of the factors corresponding to setting luminance value at least two times as claimed] at predetermined time intervals [As shown in Fig. 9, the period 64 is also selected. The period may be a fixed time interval which is preset or set by the user, i.e., a fixed period of about five minutes is selected, see col. 10, lines 19-22];

luminance resetting means for carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time [Preferably, the system is configured to allow for successive brightness adjustment cycles. More preferably, the system continues to adjust the brightness according to the selected general level of brightness, range, period and pattern until the user resets one or more of the factors or the user stops the system, see col. 10, lines 59-64];

controlling means for, in the initial stage after fabrication of the panel, illumination all of the pixels in the panel one at a time, capturing luminance information from the pixels, calculating correction values from the luminance information and a luminance setting value, and storing the correction values to a correction memory as initial correction values [In a preferred embodiment, the user sets the general level of brightness for the display and the range of brightness in which the display will automatically vary is selected by the user or preset before shipping, see col. 11, lines 58-61. Prior to the end of the period, a new random number is generated to select a

new range of brightness for the subsequent period. This allows the system to continuously vary the brightness in the above-described manner until the user stops the system or the user changes one or more of the factors, see col. 12, lines 25-30].

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 2, 4-6, 9, 13-16, 19, 22, 24, 25, 30-43, 45-52, 54-57, 62-66 and 68-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of Matthies et al. (US 6,897855) hereinafter Matthies.

12. As to claim 1, Wagner teaches a method of driving a display panel [this invention may be used with many types of displays, see col. 7, lines 7-15], comprising:

setting a pixel luminance value to a target luminance setting value at least two times/at least three times [these times could be interspersed and would be two/three times corresponding to at least two/three times as claimed, see col. 10, line 59—col. 11, line 5 for details of the explanation] at predetermined time intervals [at five minutes, see col. 10, lines 19-22 for details of the explanation];

carrying out luminance value setting operations such that a luminance setting values is set to a different luminance setting value each time a luminance value setting

operation is preformed, so that the luminance setting value is changed with the elapse of driving time [five minutes, see col. 9, line 25—col. 10, line 58 for further details of the explanation];

Accordingly, Wagner teaches all of the claimed limitation, except wherein the luminance setting values are determined from measured luminance information of the pixel.

However, Matthies teaches a method for calibrating OLED display panel which incorporates a sensor that detects and measures individual pixel brightness and some means to communicate with the display electronics so that the correct drive voltage needed to establish the desired brightness can be stored in the display memory [see col. 12, lines 34-41 for details of the explanation].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the display panel of Wagner to become the sensor that detects and measures individual pixel brightness as taught by Matthies, because this would improve the image being displayed by compensating for luminance, chromaticity non-uniformities, and changes in the operational characteristics of the OLED display panel over time (see Matthies, col. 2, line 35--col. 3, line 3).

13. As to claims 34 and 40, Wagner teaches a luminance correction device for a display panel, comprising:

luminance target means for setting pixel luminance to a target luminance setting value at least two times at predetermined intervals [these times could be interspersed and would be two/three times corresponding to at least two/three times as claimed, see

col. 10, line 59—col. 11, line 5 for details of the explanation] at predetermined time intervals [at five minutes, see col. 10, lines 19-22 for details of the explanation]; and

luminance resetting means for carrying out luminance setting operations such that a luminance setting value is set to a different luminance setting value each time [see col. 10, lines 59-64 for details of the explanation];

driving means [a CPU] for driving pixels [see col. 13, lines 19-25];

luminance measuring means for capturing luminance information from the pixels [see col. 12, lines 50-54].

a correction memory for storing correction values [the brightness control software 30 is preferably stored in the memory of the computer 24, see col. 6, lines 30-33];

calculating means for calculating correction values from the measured luminance information and the luminance setting value and storing the correction values to the correction memory, and correcting means for correcting a driving amount in accordance with the correction memory [the computer is configured to use this information to calculate the desired brightness for the display and the desired change in the brightness of the display, see col. 11, lines 26-30].

Accordingly, Wagner teaches all of the claimed limitation, except wherein the luminance determining means for determining the luminance setting value from measured luminance information of the pixel.

However, Matthies teaches a method for calibrating OLED display panel which incorporates a sensor that detects and measures individual pixel brightness and some means to communicate with the display electronics so that the correct drive voltage

needed to establish the desired brightness can be stored in the display memory [see col. 12, lines 34-41 for details of the explanation].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the display panel of Wagner to become the sensor that detects and measures individual pixel brightness as taught by Matthies, because this would improve the image being displayed by compensating for luminance, chromaticity non-uniformities, and changes in the operational characteristics of the OLED display panel over time (see Matthies, col. 2, line 35--col. 3, line 3).

14. As to claims 5 and 38 share similar limitations to those included in claim 1 and therefore the rationale of rejection will be the same. Claims 5 and 38 has the added limitation "wherein the intervals between the luminance correction operations are varied according to luminance degradation characteristics of display elements."

However, Matthies teaches the brightness level of pixels are first and second values adjusted during time T0 and T2 periods, respectively, which are compensating for loss in brightness due to aging of the OLED display [see col. 11, line 61—col.12, line 32 for further details of the operation].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the display panel of Wagner to become the brightness level of pixels are first and second values adjusted during time T0 and T2 periods, respectively, which are compensating for loss in brightness due to aging of the OLED display as taught by Matthies, because this would improve the image being displayed by compensating for luminance, chromaticity non-uniformities, and changes in the

operational characteristics of the OLED display panel over time (see Matthies, col. 2, line 35--col. 3, line 3).

15. As to claim 36 shares similar limitations to those included in claim 34 and therefore the rationale of rejection will be the same. Claim 36 has the added limitation "wherein each of the luminance setting values does not exceed a predetermined luminance setting value."

However, Wagner teaches "the general level of brightness could be the maximum brightness and the brightness would vary within a range that does not exceed this maximum brightness" [see col. 8, lines 27-58 for further details of the explanation].

16. As to claims 2, 9, 35 and 42, Wagner discloses wherein the luminance setting values are determined from measured luminance information, and said pixel luminance value is corrected to match the determined luminance setting value [see col. 2, lines 43-49 for details of the explanation].

17. As to claims 16, 41 and 49, Wagner teaches wherein until the difference between the measured luminance information and the luminance setting value reaches a fixed value or less, correction operations are repeated continuously [see col. 10, lines 59-64 for details of the explanation].

18. As to claims 4 and 37, Wagner teaches wherein each of luminance setting values does not exceed a preceding luminance setting value [see col. 9, lines 49-51 for details of the explanation].

19. As to claim 43, Matthies further teaches comprising controlling means for controlling the capture of luminance information from the pixels so that at least the

pixels are illuminated during periods other than video output periods [see col. 11, line 47—col. 12, line 57 for further details of the operation].

20. As to claim 45, Matthies wherein the controlling means is such that adjacent pixels are not successively illuminated [see col. 11, line 47—col. 12, line 57 for further details of the operation].

21. As to claim 50, Wagner teaches wherein the captured luminance information is driving current [see fig. 11, col. 12, lines 42-49, col. 14, lines 4-15 for details of the explanation].

22. As to claim 51, Wagner teaches wherein the captured luminance information is that of the starting point of the illumination of pixels [see col. 10, lines 33-36 for details of the explanation].

23. As to claims 54 and 55, Wagner teaches wherein input luminance signals are corrected in accordance with the correction values stored in the correction memory [see col. 6, lines 30-33 for details of the explanation].

24. As to claim 68, Wagner teaches wherein at least two of the correction memory, the correcting means, and the controlling means are combined [see col. 6, lines 30-33 for details of the explanation].

25. As to claim 69, Wagner teaches an image display device comprising the luminance correction device according to claim 36 [see col. 7, lines 8-15 for details of the explanation].

26. As to claim 70, Wagner teaches a light source comprising the luminance correction device according to claim 36 [wherein the backlight of the display is adjusted

over a series of sequential time intervals in accordance with a predetermined pattern, see col. 15, lines 54-57].

27. As to claims 13, 15, 46 and 48, Matthies teaches degradation characteristics related to either the luminance of elements for which luminance has been measured or to the luminance of pixels for which luminance has been measured [a method for calibrating OLED display panel which incorporates a sensor that detects and measures individual pixel brightness and some means to communicate with the display electronics so that the correct drive voltage needed to establish the desired brightness can be stored in the display memory, see col. 12, lines 34-41 for details of the explanation].

28. As to claims 14 and 47, Matthies teaches wherein the display panel has a light-emitting surface with phosphors, and the correction value calculations are carried out using both measured luminance information and degradation characteristics related to the luminance of the phosphors [phosphors areas 2412-2416, see col. 26, lines 27-56 for further details of the explanation].

29. As to claims 19 and 52, Matthies teaches wherein the display panel has at least an anode electrode and a light-emitting surface having a plurality of phosphors on the anode electrode, and the captured luminance information is anode current [see col. 25, line 61—col. 26, line 13].

30. As to claim 22, Matthies teaches wherein the amplitude or pulse width of driving signals applied to the display panel is corrected in accordance the correction values stored in the correction memory [see col. 10, lines 14-30 for further details of the explanation].

31. As to claims 6 and 39, Matthies teaches wherein the intervals [T0 and T2] between the luminance correction operations are varied according to the luminance degradation characteristics of display elements [see col. 12, lines 14-33 for further details of the explanation].

32. As to claims 25 and 57, Matthies teaches wherein a gray scale realization method for the display panel is a gray scale system such the except when an output is completed, a current or voltage value for amplitude control is changed only is an increasing direction [see col. 10, lines 14-30 for further details of the explanation].

33. As to claims 56 and 66, Matthies teaches wherein a gray scale realization method for the display panel is an amplitude control method or pulse width control method, wherein a correction memory has, for each pixel, a number of values equal to the number of levels of amplitude value [see col. 10, lines 14-30 for further details of the explanation].

34. As to claim 24, Matthies teaches wherein a gray scale realization method for the display panel is either an amplitude control method or pulse width control method [see col. 10, lines 14-30 for further details of the explanation].

35. As to claims 30 and 62, Matthies teaches wherein a gray scale realization method of the display panel is a driving method for realizing gray scale display comprising switching between amplitude control or pulse control and a system of gray scale control in which amplitude control and pulse width control are carried out simultaneously [see col. 10, lines 14-30 for further details of the explanation].

36. As to claim 31-33 and 63-65, Matthies teaches wherein, when the luminance signal level to be outputted is equal to or less than a reference value, amplitude control or pulse width control is carried out, and when equal to or greater than a reference value, the system of gray scale control where amplitude control and pulse width control are carried out simultaneously is carried out to realize gray scale display [see col. 10, lines 14-30 for further details of the explanation].

37. Claims 26-29 and 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of Matthies, and further in view of Doherty (US 5,619,228).

The combination of Wagner and Matthies teach all of the claimed limitations of claims 3 and 36, except for wherein the gray scale control, the amplitude control is such that using m high-order bit of gray scale data represented by n bits, where m and n are arbitrary integers, a current or voltage value controlled by amplitude is outputted at intervals of $1/2^m$ maximum value and the pulse width control is such that using (n-m) low-order bits, pulse width is controlled at intervals of $1/2^{(n-m)}$ maximum values.

However, Doherty teaches a gray scale control [dithering logic 414 can map a four bit value indicating one of 16 grayscale levels into 15 subframes, see col. 16, lines 21-24], the amplitude control is such that using m high-order bit of gray scale data represented by n bits, where m and n are arbitrary integers, a current or voltage value controlled by amplitude is outputted at intervals of $1/2^m$ maximum value and the pulse width control is such that using (n-m) low-order bits, pulse width is controlled at intervals of $1/2^{(n-m)}$ maximum values [For a system with r-bit intensity resolution, i.e. the number

of intensity levels equals 2r, and m-bit system capacity, i.e., the maximum word width available to the system intensity representation equals m, find the smallest integer k such that $[2^r - 2^k/m-k] - 2k$. Divide the m bits representing the intensity into two parts: k least significant bits (LSB) and j most significant bits (MSB), where j=m-k. Designate the LSB weights as $\{A_0, A_1,\ldots, A_{k-1}\}$ and the MSB weights as $\{B_k, B_{k+1},\ldots, B_{m-1}\}$, see Fig. 4, col. 5, line 56 through col. 6, line 5].

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the amplitude control is such that using m high-order bit of gray scale data and the pulse width control is such that using (n-m) low-order bits as taught by Doherty with the gray scale/brightness on the combination of Wagner and Matthies in order to achieve the benefit of preventing these artifacts while maintaining a good level of resolution is needed (see Doherty, col. 1, lines 66-67).

38. Claims 10-12 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of Matthies, and further in view of Ando et al. (US 4,672,275) hereinafter Ando.

The combination of Wagner and Matthies teaches all of the claimed limitations of claims 3 and 40, except for correcting luminance setting values is carried out during vertical blanking periods.

However, Ando teaches the correction data is stored during the vertical blanking period (see col. 4, lines 39-40).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the correction data is stored during the vertical

blanking period as taught by Ando et al in the combination of Wagner and Matthies in order to achieve the benefit of providing high accuracy in a simple and quick adjusting operations, and provide for easy and arbitrary adjustments by an end user (see Ando, col. 2, lines 16-18).

39. As to claim 12, Ando et al teaches the correction data is stored during the vertical blanking period (col. 4, lines 39-40). Thus, it would have been obvious to provide adjacent pixels are not driven.

40. Claims 23 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wagner in view of Matthies, and further in view of Xie et al. (US 6,025,819) hereinafter Xie.

The combination of Wagner and Matthies teaches all of the claimed limitations of claims 3 and 36, except wherein the correction values are calculated so as to incorporate data for gamma correction for each pixel and stored to the correction memory, wherein the correction memory has, for each pixel, values that incorporate data for gamma correction.

However, Xie teaches a display panel comprising gamma corrections (see fig. 5, col. 4, line 57).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made implement the gamma corrections as taught by Xie in the combination of Wagner and Matthies in order to achieve the benefit of providing an improved method for achieving a gray scale in a field emission display device, which provides a high number of gray scale levels (see Xie et al, col. 2, lines 9-11).

Response to Arguments

41. Applicant's arguments filed 04/14/2006 have been fully considered but they are not persuasive.

42. Applicant argues "Wagner does not disclose luminance setting values determined from measured luminance information of the pixel as claimed by applicants" see remarks at page 20. In response, the examiner respectfully disagrees. As stated *supra* with respect to claims 1, 5, 34 and 38, the examiner indicated that Matthies teaches a method for calibrating OLED display panel which incorporates a sensor that detects and measures individual pixel brightness and some means to communicate with the display electronics so that the correct drive voltage needed to establish the desired brightness can be stored in the display memory [see col. 12, lines 34-41 for details of the explanation].

43. Applicant argues "Wagner does not disclose predetermined time intervals varied according to luminance degradation characteristics as claimed by applicants" see remarks at page 21. In response, the examiner respectfully disagrees. As state *supra* with respect to independent claims 5 and 38, the examiner indicated that Matthies teaches the brightness level of pixels are first and second values adjusted during time T0 and T2 periods, respectively, which are compensating for loss in brightness due to aging of the OLED display [see col. 11, line 61—col.12, line 32 for further details of the operation].

44. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

45. With respect to dependent claims [see remarks at page 21-24], applicant agues that dependent claims with the only emphasis of the recitation in the independent claims. In response, the examiner respectfully submits that the applicant's argument based on the dependent claims is not persuasive; therefore, the response is mooting the new ground of rejection of amended independent claims as explained in greater details above by teaching of Wagner and Matthies that meets all those limitations with respect to independent claims.

For these reasons, the rejection based on at least Wagner and Matthies has been maintained.

46. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN M. NGUYEN whose telephone number is 571-272-7697. The examiner can normally be reached on MON-THU from 8:00-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, a supervisor RICHARD A. HJERPE can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8000.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the Patent Application Information Retrieval system, see http://portal.uspto.gov/external/portal/pair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Nguyen
Patent Examiner
Art Unit 2629

KMN
June 29, 2006

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600